Notice No.1

Rules for the Classification of Air Cushion Vehicles July 2019

The status of this Rule set is amended as shown and is now to be read in conjunction with this and prior Notices. Any corrigenda included in the Notice are effective immediately.

Please note that corrigenda amends to paragraphs, Tables and Figures are not shown in their entirety.

Issue date: November 2019

Amendments to	Effective date	IACS/IMO implementation (if applicable)
Chapter 3, Sections 2, 3, 4, 5 & 10	1 January 2020	N/A

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Chapter 3
Hull Structures

■ *Section 2*
Global hull loads and strength

2.3 Structural response to wave impact

(Part only shown)

2.3.2 Wave impact ~~load~~ force is to be taken as:

■ *Section 3*
Local hull loads and strength

3.1 Impact loads on the bottom and side shell

3.1.2 The distributed pressure, p_{dist}, along the length of the bottom structure is taken as 0,44 times the ~~local pressure~~ peak pressure, p_{peak}.

3.1.3 The peak pressure, p_{peak}, is generally to be applied to plating and secondary stiffeners. The distributed pressure, p_{dist}, is generally to be applied to primary frames, girders and large unstiffened panels of plating~~.~~, and over an impact area, $A_{\mathrm{w,i}}$, taken as:

$A_{\mathrm{w,i}} = \frac{F_{\mathrm{w,i}}}{p_{\mathrm{dist}}}$ m²

where

$F_{\mathrm{w,i}}$ is defined in *Ch 3, 2.3 Structural response to wave impact 2.3.2.*

3.6 Collision Loads

3.6.1 The strength of supporting structure and attachments of masses greater than 50 kg are to be able to withstand ~~the following~~ design accelerations without fracturing ~~or suffering permanent deformation~~. Force magnitudes and directions are to be taken as follows:

- 6g forward direction.
- 3g after direction.
- 3g transverse direction.
- 3g vertical upward direction.
- 4g vertical downward direction.

The vertical acceleration cases include the self-weight component.

3.7 Local strength

3.7.1 ~~When applying the loads given in this Section the requirements for plating and stiffeners given in *Pt 7, Ch 3,1.16 Plating general* and *Pt 7, Ch 3, 1.17 Stiffening general* are generally to be applied. Other strength models will be accepted, provided they conform to recognised theory or standards and are agreed with LR.~~ When applying the loads given in this Section, strength models based on simple plate bending, beam theory, or other recognised methods will generally be acceptable. Where longitudinal and transverse stiffeners form grillage structures providing mutual support, or where the structural arrangement is complex, finite element or alternative methods may have to be used and are to be agreed with LR prior to submission. Consideration is to be given to assumptions regarding end fixity and load application as appropriate for the selected method.

■ *Section 4*
Superstructures and deck-houses

4.3 Seating construction

4.3.1 Seats and their attachments to the deck are to be certified in accordance with the *International Code of Safety for High-Speed Craft* Annex 10. Other industry equivalent standards may be accepted in agreement with LR.

■ *Section 5*
Hull appendages

5.2 Air rudders and propeller ducts

5.2.1 ~~The scantlings of the air rudders, propeller ducts, and their support and attachments will be specially considered on request. The designer is to include details of the maximum design loads, which may include both aerodynamic and actuating loads as well as design safety factors.~~ The duct is to have adequate stiffness to maintain a clearance between the propeller tips and the inner surface during the most adverse operational conditions. Duct strength, stiffness, hull foundation, and factors of safety will be specially considered based on the operational loads, e.g. thrust and inertia.

5.2.2 ~~The hull supporting structure and attachments of the ducts will also be considered for loads resulting from collision accelerations.~~The hull supporting structure and attachments of the ducts will also be considered for collision loads.

5.2.3 Air rudder scantlings, hull foundations and factors of safety will be specially considered based on the operational side forces.

5.3 Air propeller supports or pylons

5.3.1 ~~The hull supporting structure and attachments of the air propeller supports or pylons will be considered for loads resulting from collision accelerations.~~ Strength of air propeller supports or pylons, hull foundations and factors of safety will be specially considered based on the operational loads, e.g. propeller gyroscopic thrust and inertia.

5.3.2 The hull supporting structure and attachments of the air propeller supports or pylons will also be considered for collision loads.

■ *Section 10*
Limiting stress coefficients

10.1 Limiting stress coefficients for local loads

(Part only shown)

Table 3.10.1 Limiting stress coefficients for local loading

Item	Limiting stress coefficient		
	Bending f_σ	Shear f_τ	Equivalent f_e
Hull appendages			
~~Air rudder scantlings~~	~~0,50~~	~~0,29~~	~~—~~
~~Hull structure supporting air rudder and air propeller supports~~	~~0,67~~	~~0,39~~	~~—~~
Landing pads and skids	0,67	0,39	—
Anchoring and mooring equipment			
Equipment attachments and fittings	0,90	0,52	–
Equipment supporting structure	1,0	0,58	–
Structures and attachments subjected to collision loads			
Equipment attachments (*see* Note)	0,90	0,52	–
Equipment supporting structure (*see* Note)	0,90	0,52	–

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